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INTERNATIONAL GEOPHYSICAL COOPERATION PROGRAM -- SOVIET-BLOC ACTIVITIES

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I. GENERAL

Longitude and Latitude of Purple Mountain Observatory Determined

The longitude and latitude of the Purple Mountain Observatory has been determined accurately for the first time since its foundation, according to reports from the observatory.

The longitude determination was made on the basis of 247 observations conducted from March 1956 to December 1957. A Zeiss astronomical transit with a 100-millimeter aperture was used. The longitude determination was λ = minus 7 hours 55 minutes 17.016 seconds $\pm$ 0.002 seconds. ("Determination of the Longitude of the Purple Mountain Observatory," by Li Hua and Wang Cheng-hsu, Purple Mountain Observatory; Peiping, Acta Astronomica Sinica, Vol 7, No 1, Jun 59, pp 26-28)

The latitude of the observatory was determined using Talcott's method. Five observers using a 100-millimeter Zeiss astronomical transit conducted observations of groups of star pairs. From 9 March to 12 April 1956, 13 groups containing 173 pairs were observed. The latitude was computed for each group. The results obtained by each observer were averaged giving the latitude as 32 03 59.77 $\pm$ 0.02 seconds N. ("Determination of the Latitude of the Purple Mountain Observatory," by Tsou I-hsin, Li Hua, Li Shih-kuang, and Chu Jung-ho, Purple Mountain Observatory, Academia Sinica; Peiping, Acta Astronomica Sinica, Vol 7, No 1, Jun 59, pp 29-34)

Coordinates of Tientsin Latitude Station

The latitude station located in the western suburbs of Tientsin was founded in 1958. The geographic coordinates of the observation room where the Zenith telescope is installed were determined in March and April of that year using a Bamberg transit with an aperture of 50 millimeters. The latitude was obtained by Talcott's method and the longitude by the usual transit observations. The results are as follows: λ = minus 7 hours 48 minutes 13.834 seconds $\pm$ 0.003 seconds, φ = plus 39 08 02.23 $\pm$ 0.08. ("Determination of the Longitude and Latitude of the Tientsin Latitude Station," by Li Hua and Ho Chin-pin, Purple Mountain Observatory, Academia Sinica; Peiping, Acta Astronomica Sinica, Vol 7, No 1, Jun 59, p 38)

II. ROCKETS AND ARTIFICIAL EARTH SATELLITES

Exchange of Satellite Data by US and USSR Praised by Masevich

"Communication between the Astronomical Council of the Academy of Sciences USSR /Astrosovet/ and the Smithsonian observatory in Cambridge, which is the center of optical observations of satellites in the US, has been intensified." The mutual benefits of such cooperation was noted by A. G. Masevich, chairman of Astrosovet, in an interview with a Tass correspondent. The balance of the interview follows.

"During the flights of the first and second Soviet artificial earth satellites, communication between us and the American observers was still loosely set up. After the launching of the third Soviet satellite, the Americans actively entered in the observations.

"Our computing center sends telegrams to the US informing their observers of the passage of satellites over their territory. We have already obtained more than 700 results of observations of the third satellite and its carrier-rocket from the US. The observations sent were of high quality, particularly those by the photographing points.

"On its own part, the Astronomical Council receives telegrams with data on the passage of American satellites. The Soviet stations observe them. However, as is known, the inclinations of the orbits of the American satellites are usually small and they do not pass over USSR territory. Only when the orbital inclination of a satellite is 50 degrees or more is there a possibility for its observation. We have sent to the US that which we have succeeded in recording in the motion of the American satellites. Recently, a letter from Prof Fred Whipple, director of the Smithsonian observatory, arrived at Astrosovet, in which appreciation was expressed for the observations of the fourth American satellite conducted by Soviet scientists.

"Soviet scientists stand for cooperation with their foreign colleagues in all problems of science, including space problems. Catologues with the results of observations of the Soviet satellites published by the Astronomical Council of the Academy of Sciences USSR, and also the publications of the American center of observations greatly interest the specialists of all countries. The exchange of such information on the widest scale is necessary for the fruitful development of the young science of space."

("Satellites Aid Friendship"; Moscow, Izvestiya, 8 Dec 59, p 4)

Sputnik III Completes 8,000th Revolution

Sputnik III completed its 8,000th revoltion around the Earth at 1500 hours Moscow time on 27 November 1959. The satellite has been orbiting the Earth for 561 days and during this time it has covered a distance of about 360 million kilometers.

The orbital period of the third Soviet satellite has decreased from 105.95 minutes initially, to 95.27 minutes at present. Its apogee has dropped from 1,880 kilometers down to 865 kilometers.

The radio transmitter "Mayak," operating on a frequency of 20.005 megacycles, continues to function steadily.

Since its launching, Sputnik III has been in flight about 13,470 hours. During this time it was illuminated by the Sun for 10,080 hours and was in the Earth's shadow for about 3,390 hours. Power was realized from solar batteries while the satellite was in the zone illuminated by the Sun and from chemical power sources while in the shadow zone. Power for the transmitter now is only supplied by the solar batteries, as the chemical batteries are dead. Transmission from the satellite therefore ceases when it enters into the shadow of the Earth.

More than 90 observatories and optical observation points scattered throughout the Soviet Union and more than 100 such points outside the USSR are conducting observations of Sputnik III. ("Eight Thousand Revolutions Around the Earth"; Moscow, Pravda, 27 Nov 59, p 6)

III. UPPER ATMOSPHERE

Photograph of New Soviet Optical Telescope

A photograph of the new optical telescope being built for the Crimean Astrophysical Observatory recently appeared in a Soviet newspaper. According to the caption, it is being built by the Leningrad Optico-Mechanical Plant which specializes in producing precision apparatus. The telescope is one of the newest instruments being assembled by the plant. Of complex construction, it required the manufacture of hundreds of details and the use of a special optic. The diameter of the mirror of this very large reflector telescope is 2.6 meters. (Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 27 Nov 59, p 4)

April 1958 Annular Eclipse of Sun Observed by Joint Soviet-Chinese Expedition

Observation of the annular eclipse of the Sun on 19 April 1958 was conducted on the Island of Hainan by a joint expedition of the Academy of Sciences USSR and the Academia Sinica. The coordinates of the point selected were 18 14 34 N, and minus 7 hours 18 minutes 02.86 seconds longitude. The apparatus used had the following parameters: the diameter of the paraboloid antenna, 120 centimeters; the effective temperature of the antenna, directed at the Sun, $T_a \cong 670$ degrees Kelvin; the time constant of the recording device, 4 seconds. The natural fluctuations of the instrument determined as the mean-quadratic deviation of the line on the self-recording apparatus corresponded to a change in S_A by 6 degrees Kelvin. The antenna was mounted on a parallactic stand and swiveled by means of a synchronous motor. The flux of the Sun's radio emission on the 4.5-centimeter wave was recorded with the aid of an H370 self-recording galvanometer and also, independently, by means of visual readings of a class 0.5 instrument.

Results of the observations are presented in the form of a graph. In processing the results, the radiation of the Moon, the effect of the antenna diagram, and the data of periodic calibrations of the apparatus which were made four times during the observations were considered. In further processing of the data obtained, the case of the eclipse was utilized. The radiation of local sources was estimated according to the change in the sharpness of the recordings during the covering and uncovering of the Sun.

Two anomalous parts of the curve which are given cannot be successfully compared with any sun spots visible on the day of the eclipse. A construction of the position of the lunar disk at the moment of radio-contact leads to the conclusion that the corresponding local sources occur out of the edge of the Sun's disk.

The curve showing the course of the radio eclipse for a quiet Sun obtained by means of deducting the effects of local sources is also shown and can be compared with the curve of the covered areas. The presence of a double minimum near the center of the eclipse directly indicates the presence of a bright limb at the edge of the solar disk. Refinement of this part of the curve leads to the conclusion that the excess brightness of the limb carries about 6 percent of the total flux of the Sun's radio emission on the 4.5-centimeter wave length. "Observation of the Annular Eclipse of the Sun of 19 April 1958 on the 4.5-Centimeter Wave," by A. P. Molchanov, N. G. Petorova, F. I. Skripov, and Lu Yang; Peiping, Acta Astronomica Sinica, Vol 7, No 1, Jun 59, pp 1-6)

Observations of solar radio emission in the 8-millimeter range of radio waves are of great interest, for they give material which can explain the structure of the lower and middle chromosphere. Especially interesting in this sense are observations during an annular eclipse. It was with this in view that observations in the 8-millimeter range were made during the 19 April 1958 annular eclipse by the joint expedition of the Academy of Sciences USSR and the Academia Sinica. The work was conducted in San-ya, Island of Hainan, 18 14 34.08 N, minus 7 hours 18 minutes 01 seconds longitude.

The radiotelescope used for the observations was made in the Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR. The instrument has a parabolic reflector on an equatorial mounting. The directivity diagram was about 60 minutes at 0.5 power. A specially developed two-channel radiometer served as a receiver, making it possible to record both the total flux of the Sun's radio emission and the circularly polarized component of the emission. The fluctuation threshold of the radiometer consisted of 5 degrees, according to the antenna temperature, with a time constant of 10 seconds.

A curve is given showing the changes of the antenna temperature during the eclipse, tracking the center of the solar disk, in percentages of the temperature of the antenna directed at the uneclipsed Sun.

The data obtained from a preliminary processing of the results are given. ("Observations of the Sun's Radio Emission in the 8-Millimeter Range During the 19 April 1958 Annular Eclipse," by N. A. Amenitskiy, Li Cheng-fen, A. Ye. Salomonovich, U. V. Khangil'din, and Ch'en Chun-liang; Peiping, Acta Astronomica Sinica, Vol 7, No 1, Jun 59, pp 7-9)

Hungarians Report Soviet Observation of Lunar Volcanism 23 October

Nikolay Kozyrev, the Soviet astronomer, informed the Pulkovo observatory on 29 October 1959 that he had succeeded in preparing new color photographs of the Alphonse peak on the Moon. The Soviet scientist, who first noticed volcanic activity on the Moon in 1958, reported that on 23 October 1959 the Alphonse peak showed a marked deviation from earlier observations. ("New Observations of Volcanic Activity in the Alphonse Crater"; Budapest Magyar Nemzet, 30 Oct 59, p 3)

Hungarian-Bulgarian Cosmic Ray Laboratory in Bulgaria

Construction of an observation station will soon be finished in the Bulgarian Rila Mountains. It is being established within the framework of Hungarian-Bulgarian scientific cooperation. The /Hungarian/ Central Physics Research Institute is preparing equipment for the laboratory in which they will study cosmic radiation coming from space. ("In the Bulgarian Rila Mountains"; Budapest, Nepszabadsag, 24 Oct 59, p 10)

IV. SEISMOLOGY

Earthquake in Mongolia Reported

On 4 December 1957, a destructive earthquake of an intensity of 11 occurred in the Gurvan-Bogdo mountains in the Mongolian People's Republic. The earthquake has received the name of the Gobi-Altayskiy earthquake. Air waves arose at the epicenter during the quake and were recorded on microbarographs at a distance of 2,440 kilometers from the epicenter.

A. Treskov, V. Solonenko, and N. Florensov have studied the Gobi-Altayskiy earthquake and made a detailed investigation of the region of the epicenter. It was found that the greatest destruction occurred in the Ikhe-Bogdo mountain range and that many fissures, pockets, slides, and faults were formed. The main fissure extended continuously for 250 kilometers from the Bakhar range on the west to the eastern boundaries of Bago-Bogdo. The fissure was of considerable depth and cut through loose sedimentary and crystalline rock.

As a result of the earthquake, the Ikhe-Bogdo mountain range (which is 100 kilometers long and 3,790 meters high) was displaced 3-3.5 meters to the east and raised 2-6 meters. /V. Solonenko, A. Treskov, N. Florensov, "Earthquakes in Mongolia and the Baykal Region," Sovetskaya Rossiya, No 30 (490), 5 Feb 58/.

The focus was evidently located in the upper part of the Earth's crust. Indirect indications of this are strong local disturbances in the epicenter, the low intensity of the body waves, their gradual rise, and the great intensity of the surface waves recorded by the overwhelming majority of seismic stations around the world /Bureau Central-International de Seismologie. Bull. Dechange, Seisme du 4 decembre 1957/.

It is impossible to determine the exact depth of the focus from seismic instruments since there was no seismic station near the epicenter.

Table 1.

Seismic Service	Time at Focus	Geographic Coordinates of the Epicenter	
		°N	°E
USSR	03 hr 37 min 47 sec	45.5	1000
USCGS	03 27 45	45.5	95.5
BCIS	03 37 44	45.25	99.5
Shillong	03 37 30	47	100
Quetta	03 34 19	47	102.5

Table 2.

Type of Wave	Time of Entry	Travel Time	Period, Seconds
P	03 hr 42 min 39 sec	00 hr 04 min 52 sec	
V-Air waves	05 45	02 07 13	7-4

The intensity M was determined by many seismic stations and services of the world on the basis of surface waves. These services estimated it to be from 7 3/4 (USSR) to 8.6 (Pasadena). The value of m for the Pasadena station is equal to 7.9 /B. Gutenberg, "The Energy of Earthquakes," Quat. Geol. Soc. London, CXII, No 445, p 1, 1956/. The time at the focus and the coordinates of the epicenter according to various sources are given in Table 1. The discrepancies in the values for the time at the focus and the coordinates of the epicenter, as given in Table 1, particularly when these values were determined from the data of a single station (for example Shillong and Quetta) is probably explained by the uneven rise in the body waves. This could be caused by the fact that the focus was not at a great depth and was of such great dimensions.

In calculations of the epicentral distance and the travel time of waves, values for the time at the focus and coordinates of the epicenter used in this paper are found by the seismic service of the USSR.

A brief account of the characteristics of the apparatus installed in the station to record air waves is given below. The character of the air waves recorded at this station is also described.

Besides microbarographs at the temporary station, which was recording air waves and was located 2,440 kilometers northeast of the epicenter, there were two 3-component electrodynamic seismographs with different constants, which recorded the arrival of body and surface waves. There were also two horizontal seismographs of low sensitivity with amplifications of the order of 5 and 20.

Recordings on the seismograms obtained with the three above-indicated sets of apparatus differ in nature. On the recording, above all, on the wide-band apparatus (the SVK and AGK seismographs /Ye. F. Savarenskiy, D. P. Kirnos, Elementy Seysmologii i Seysmometrii (Elements of Seismology and Seismometry), State Publishing House of Technical and Theoretical Literature, Moscow-Leningrad, 1955/) the body waves were registered with low amplitude, and their entry is undecipherable; the intensity of the surface waves is considerable and it is impossible, therefore, to separate the entry of the separate groups of surface waves since the recording is washed out. The duration of the recording of oscillations on the seismogram is more than 4 hours. On the recordings of the apparatus with

the narrow band filter (SVKM and SGKM type seismographs /F. I. Monakhov, I. P. Pasechnik, N. V. Shebalin, Seysmicheskiye i Mikroseysmicheskiye Nabluydeniya na Sovetskikh Seysmicheskikh Stantsiyakh v Period MGG (Seismic and Microseismic Observations at Soviet Seismic Stations During the IGY), Publishing House of the Academy of Sciences USSR, 1959/, the entry of the body waves is clear (the time of entry of the longitudinal wave is shown in Table 2), and the intensity of the recording of the surface waves is considerably less than on the seismograms obtained with the SVK AND AGK type seismographs. Owing to this, the entry of the body waves of several succeeding shocks, less intensive than the main shock, can be clearly distinguished on the background of the oscillations of the surface waves. The oscillation period in the body waves of the succeeding shocks is somewhat less than the oscillation period in these same waves for the main shock.

Taking the mean value of the intensity = M 8 and using the known relationship between M and the energy E /given in B. Gutenberg, "The Energy of Earthquakes," Quart. Geol. Soc. London, CXII, No 445, p 1, 1956/, it is possible to estimate the energy of the elastic seismic waves arising during the Gobi-Altayskiy earthquake, with a value of 10^{24} ergs.

The recording of the air waves was obtained at the epicentral distance of 2,440 kilometers on the EDNB-I and EDMB-II type electrodynamic microbarographs with galvanometric recording. The sensitivity of these microbarographs was, correspondingly, for the EDMB-I, 2 bar per millimeter per meter, and for the EDMB-II, 7 bar per millimeter per meter.

Microbarographs prepared by seismic stations further removed from the epicenter did not record air waves, which, apparently, is connected with the low intensity of the oscillations.

Photographic copies of the recording of the air waves which were generated during the Gobi-Altayskiy earthquake obtained on a microbarograph of the EDMB-I type at a distance of 2,440 kilometers, are shown in Figure 1 /not reproduced here/, from which it can be seen that the introduction or entry of the air wave is undistinguishable, and the oscillations have a quasi-sinusoidal character. In the first part of the recording the periods of vibration are not great, on the order of a 7-8 seconds; in the middle portion of the recording it amounts to 4-6 seconds. The amplitude of the wave at the beginning of the recording is slightly less, on the order of 3-4 bar; in the central portion of the recording it amounts to 5-6 bar. The total length of the recording is somewhat over 10 minutes.

The energy of the air waves, determined in accordance with the formula given in the work /T. I. Whipple, "The Great Siberian Meteor and the Waves, Seismic and Aerial, Which It Produced," Quart. J. Roy. Meteor. Soc., 56, 1930/ amounts to 10^{17} ergs, i.e., about 107 times less than the energy released in the form of elastic seismic waves. The time of the entry and the travel time of the air waves are given in Table 2. The travel time of the air wave from the epicenter to the station is equal to 2 hours 7 minutes. Correspondingly, the speed of propagation of the air wave is v_v=320 meters per second, which with an error of 1-1.5 percent coincides with the values of the speeds of air waves observed in the explosions of volcanos, meteorites, and hydrogen bombs /T. I. Whipple, "The Great Siberian Meteor and the Waves, Seismic and Aerial, Which It Produced," Quart. J. Roy. Meteor. Soc., 56, 1930; I. P. Pasechnik, "The Seismic and Air Waves Arising in the Eruption of the Bezymynniy Volcano of 30 March 1956," Izv. AN SSSR, Ser. Geofiz., No 9, 1958; Yamamoto Ryozaburo, "The Microbarographic Oscillations Produced by the Explosions of Hydrogen Bombs," Meteor. Notes of the Meteor. Res. Inst. Kyoto Univ., Ser 2, No 1, 1954/*

The absence on the recordings of clear arrivals of air waves and a sharply expressed dispersion anomaly, characteristic for powerful ground explosions /reference same as *above/, and also relatively long duration oscillations, can be indicative that the source of air oscillations did not have a sharply expressed pulse characteristic.

On the basis of the data, it can be concluded that the air waves originated at the epicenter at the moment of the earthquake and were caused, apparently, by large-scale dislocations --fissuring within the Earth's crust.

Air waves connected with the passage of surface waves through thick layers of sedimentary rock /recordings of which are given in N. Benioff, M. Ewing, F. Press, "Sound Waves in the Atmosphere Generated by a Small Earthquake," Proc. Nat. Acad. Sci. USA, 33, No 9, 1951/, were not recorded during the Gobi-Altayskiy earthquake and other intense earthquakes.

In earthquakes with intensities equal to that of the Gobi-Altayskiy quake, the epicenters of which were located in the region of the Aleutian Islands, no air waves were recorded on the microbarographs. This may be connected with the great depth of the foci, their distribution under the bottom of the ocean, and also the considerably greater epicentral distances.

We note in conclusion that to study the nature of air waves arising in surface earthquakes, seismic stations close to the epicentral zone should be equipped with sensitive microbarographs. ("Air Waves Arising in the Gobi-Altayskiy Earthquake of 4 December 1957," by I. P. Pasechnik, Academy of Sciences USSR, Institute of the Physics of the Earth; Moscow, Izvestiya Akademii Nauk, Seriya Geofizicheskaya, No 11, Nov 59, pp 1687-1689)

V. OCEANOGRAPHY

More Details on Soviet Bathysphere

A few more details on the new Soviet bathysphere /gidrostat/, the GG-57, are given by Engr O. Sokolov in a recent news article.

The GG-57 is a special deep-sea bathysphere, designed by the collective of the Leningrad Design Institute of Giprorybflot /State Institute for the Design and Planning of the Fishing Fleet/. The device is capable of descending to depths of 600 meters. A feature of the craft is that no special hoisting apparatus is required for its operation. The usual trawl winch or cargo boom is all that is needed. Thus, a ship operating at sea can use the bathysphere at any time.

The new bathysphere consists of two cylinders joined by a cone-shaped band. The upper cylinder has a diameter of 1,100 millimeters and the lower one, a diameter of 800 millimeters.

The device is equipped with the latest equipment needed for extensive scientific research observations under water. Five ports ensure a wide view of the space surrounding the bathysphere. Photographic and motion picture apparatus are fastened to a rotating mount. There is a powerful illuminating system for continuous lighting and for producing intensive flashes of light while photographing. The light can be directed toward any point by an observer using a hydraulic drive. Furnishing of electric power for the bathysphere and telephone communication are accomplished by a special cable.

Oxygen reserve and a regenerating apparatus can ensure a safe period of 12 hours for an observer within the bathysphere.

Safety measures in case of danger make it possible for the observer to release the hoisting cable, cut the power cable by means of special hydraulic cutters, drop an emergency ballast, and surface. ("At a Depth of 600 Meters," by O. Sokolov; Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 29 Nov 59, p 4)

VI. ARCTIC AND ANTARCTIC

Severnyy Polyus-8 Prepared for Polar Winter

The Soviet scientific research drift station Severnyy Polyus-8 is now located 750 kilometers north of Ostrov Vrangelya. Winter weather has set in. The air temperature has frequently dropped to minus 30 degrees centigrade. Deep snow drifts have accumulated around the huts and structures of the station.

During the 6-month period since the organization of the station, the ice floe with the camp of Soviet scientists has traveled 360 kilometers in a general northwesterly direction. The actual distance traveled during this period, including the loops and zigzags of the drift course, was about 1,500 kilometers.

The station staff workers are well prepared for the long polar winter. The huts are protected against the cold, and the instruments and devices have been checked for work at low temperatures. ("The Polar Night Is Approaching"; Moscow, Vodnyy Transport, 7 Nov 59)

Fifth Antarctic Expedition

The Ob' and the Kooperatsiya, which both took part in previous antarctic expeditions, will soon leave on a new antarctic voyage.

During a 14-month period, the Fifth Soviet Antarctic Expedition, which includes specialists in many fields of science, will conduct complex research on the coast and in the central regions of East Antarctica. Over 120 scientists will winter at the Mirnyy observatory, at the interior station Vostok, and at the station Lazarev on Queen Maud Land, over 3,000 kilometers west of the Pravda Coast. Temporary scientific research bases will be established both on the coast and in the interior to study changes in climate and other geophysical phenomena.

With the help of sled-tractor trains and airplanes, field observations will be conducted in accordance with an extensive program. Contrary to former years, when studies were made mainly along "linear" routes, the new expedition plans to make many observations covering a vast area in the interior of the continent.

The aerometeorological detachment, headed by O, Krichak, Candidate of Geographical Sciences, will conduct stationary meteorological, aerological, actinometric, and a number of special observations for a more detailed study of the climate and weather of East Antarctica.

The main task of the glaciological detachment, headed by V. Ivanov, Candidate of Geographical Sciences, is to obtain surface characteristics of the ice sheet of Antarctica. During the sled-tractor traverse into the interior, seismic soundings of the ice sheet will be made and gravimetric studies and glaciological observations will be conducted. For the first time, an aeromagnetic survey will be made on a large scale to determine the basic relief outlines of the subglacial bed of East Antarctica. Airplanes will be used to expand the area of observations. They will carry field parties of scientists supplied with portable instruments to various points of the ice cap.

As a result of these studies, the Soviet polar scientists will obtain the necessary data for the compilation of a hipsometric map of East Antarctica.

Members of the geophysical team headed by P. Sen'ko, Candidate of Geographical Sciences, will study the peculiarities of the Earth's magnetic field, structure of the ionosphere, and other geophysical phenomena.

Considerable attention is being given to the study of the geological structure of East Antarctica. Extensive research will be conducted in the mountains of Queen Maud Land. The geological-geographical team, which is going to winter at station Lazarev, has been given the task of compiling a geological map of the mountains of Queen Maud Land. The work of this team will be supervised by D. Solov'yev, a participant in three previous Soviet antarctic expeditions. To study outcrops of basic rocks, the geologists and geographers will make a number of flights along definite routes with landings at certain places.

At present, about 300 Soviet polar specialists are due to leave for the Antarctic. These include members of the continental expedition, the marine detachment, and the crews of Ob' and Kooperatsiya. Most of the members of the new expedition are experienced polar explorers who have worked in the Arctic; many of them have been in Antarctica before. Those traveling to the Antarctic for the Second time are G. Matveychuk, deputy chief of the expedition; O. Krichak, chief of aerometeorological detachment; P. Sen'ko, chief of geophysical detachment; D. Aralov, chief of communications and radio navigation; I. Popov and V. Teterin, aerologists; O. Kolomiytsev, geophysicist; and B. Aleksandrovskiy, L. Bogdanov, P. Boyko, N. Moskalov, S. Polyakov, and N. Sorokin, radiomen.

V. Sidorov has been appointed chief of station Vostok. This will be his second wintering period at the south geomagnetic pole. A group of ten men will work with him. The same number of polar specialists will work at the station Lazarev, in addition to station chief L. Dubrovin, geographer and associate of the Arctic and Antarctic Institute. The aviation detachment will be headed by the well-known polar pilot A. Pimenov.

A group of scientists from the GDR and Czechoslovakia will also work as members of the continental expedition. These will include the German meteorologists Guenther Skeib, Christian Popp, and Joachim Kolbig, and the Czechoslovak specialists Dr Oldrich Praus, geophysicist, and Oldrich Kostka, aerologist.

A group of scientists headed by Prof I. Maksimov will conduct hydrological, hydrographic, aerometeorological, actinometric and geophysical studies aboard the Ob' in antarctic seas, including the Atlantic and Indian Oceans, and the little-explored Bellingshausen Sea.

The expedition will have a number of new planes, including one Il-14 (this heavy Soviet airplane is being sent to Antarctica for the first time), two LI-2, one AN-2, and one MI-4 helicopter.

The members of the Soviet expedition will continue the friendly and fruitful cooperation and exchange of scientific information with scientists of Australia, England, Belgium, New Zealand, Norway, the US, France, Japan, and other countries conducting explorations in Antarctica. -- Ye. Korotkevich, chief of Fifth Soviet Antarctic Expedition. ("Fifth Antarctic Expedition"; Moscow, Vodnyy Transport, 5 Nov 59)

East German Meteorologist in Antarctic

The East German scientists Skeib, Kolbig, and Popp (from the Meteorological and Hydrological Service in Potsdam) who will winter with the Soviet expedition at the "Mirny" station will work in close cooperation with Soviet meteorologists in the meteorological group of the expedition. Chemical analyses, measurements of the radiation balance and heat balance of the air, are among the special tasks of the German research group. This is the first time East German scientists will participate in such an expedition. ("Scientists From the GDR Will Winter in the Antarctic"; Berlin, Neues Deutschland, 17 Nov 59, p 4)

Ob' Leaves for Antarctic

The members of the Fifth Soviet Antarctic Expedition left Leningrad aboard the Ob' on 12 November 1959. The ship carries over 200,000 tons of expedition cargo, including tractors, snow vehicles, fuel, scientific equipment, provisions, polar clothing, and Il-14, LI-2, and AN-2 airplanes and one MI-4 helicopter. About 100 polar specialists, including scientists, aviators, mechanics, and communications workers, are aboard the Ob'. Many of them are traveling to Antarctica for the second or third time.

The remaining group of expedition members will travel on the ship Kooperatsiya, which is scheduled to leave during the latter part of November. ("Fifth Scientific Expedition to Antarctica"; Moscow, Pravda, 13 Nov 59)

Transantarctic Traverse Begins

The station Komsomol'skaya was established in the interior of Antarctica 2 years ago by the Second Soviet Antarctic Expedition. A large group of polar explorers is once more assembled at this point. On 6 November, the long sled-tractor traverse across central regions of the continent and the South Geographic Pole started out from this base. The first populated point along the route will be the Soviet station Vostok.

The members of the sled-tractor train were transported to Komsomol'skaya by plane from Mirnyy. At the time of landing, the air temperature at Komsomol'skaya was minus 62 degrees centigrade. (Prof B. Savel'yev, chief of glaciological detachment, "In the Land of the Purga"; Moscow, Vodnyy Transport, 7 Nov 59)

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